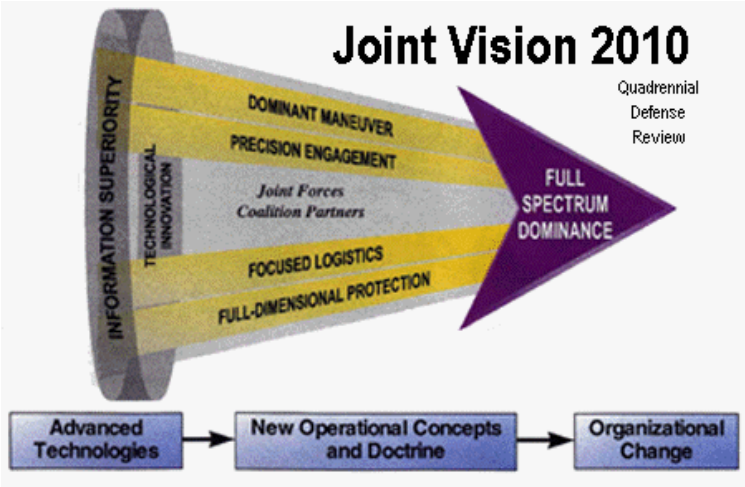
Introduction to Information Resource Management

The mission of the Department of Defense is to deter threats of organized violence against the United States and its interest, and to defeat such threats should deterrence fail (National Military Strategy of the United States of America, 1997).

Joint Vision 2010 is the conceptual template for joint operations and warfighting in the future. JV 2010 rests on the foundations of information superiority and technological innovation. Information superiority is the capability to collect, process, and disseminate an uninterrupted flow of precise and reliable information, while exploiting or denying an adversary's ability to do the same. Success in any operation depends on our ability to quickly and accurately integrate critical information and deny the same to an adversary.



A globally vigilant intelligence system that is able to operate in a complex environment with an increasing number of potential opponents and more sophisticated technology is critical. It must overcome increasingly varied means of deception and protect and secure its information channels.

Robust intelligence and assured information systems are also critical to the command and control of our forces. The ability to gather, process, and disseminate and uninterrupted flow of reliable and precise information under any condition is a tremendous strategic and military advantage. A secure Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture must be designed and developed from the outset for rapid deployment and with joint and multination interoperability in mind. By 2010, we should be able to enhance the capabilities of our

forces through technology. To exploit the enormous potential of technology, we must develop in a systematic manner, the full range of required enhancements. This process must begin with a new conceptual framework for operations. The basis for this framework is found in the improved command, control and intelligence, which can be assured by information superiority.

Objectives

1. Recognize how communication-computer systems personnel contribute to the information technology projects;
2. Identify typical functional responsibilities of DoD personnel within the communications—computer systems career field;
3. Identify potential career opportunities within the communications—computer systems career field.
4. Recognize the functions of the Chief Information Officer of the agency.
5. Identify the importance of a team approach to the IT acquisition process and identify the consequences of poor teamwork.
6. Identify the responsibilities of the Integrated Product Team in IT acquisition.

The Communications—Computer Systems Career field includes:

- Computer systems analysts
- Information management specialists
- Telecommunications managers
- Software/automation specialists
- Computer engineers
- And many more jobs!!

Typical duties performed by employees are outlined in DoD 5000.52-M, Acquisition Career Development Program, Appendix B. Some of the tasks these professionals are called upon to perform include:

- Acquisition of automated information systems and interconnecting components. This includes hardware, software, and firmware products (such as computers, ancillary equipment, software, telecommunications, and other related services).
- Providing direct support for the acquisition of automated information systems
- Manipulating data and information.

In providing direct support for the acquisition of automated information systems, you may be called upon to:

- Identify requirements
- Write and/or review specifications
- Identify costs

- Obtain resources (manpower, funding, and training)
- Test, evaluate, plan, obtain, and manage life cycle support (operations, maintenance, and replacement).

In the management and manipulation of data and information, you may be called upon to:

- Create….
- Record….
- Produce….
- Store….
- Retrieve….
- Process….
- Transmit….
- Disseminate….
- Present….
- And display data and information.

The Communications-Computer Systems Career Field:

Communications-Computer Systems careerists are generally employed at:	Computer related job series include:
Major command headquarters Service component headquarters Directorates of Information Systems for C4 Program management offices DoD acquisition agencies Defense Contract Management Command.	0301, 0334, 0343, 0391,0392, 0801,0854,0855, 1101, 1102, 1515, 1550 Army AOC: 53B and 53C Navy AQD: AR Air Force AFSC: 33SX, 61SXA, 62EXC, 63AXB, and comparable enlisted AFSCs Marine Corps MOS: 4002, 9646, 2502, 2602, and 2802 Short descriptions of these job series can be found in our Resource Library.

In order to obtain certification at Level I in the Communications-Computer Systems career field, an employee must have:

- One year of acquisition experience in communications/computer systems
- Completed the training course ACQ 101, Fundamentals of Systems Acquisition Management
- Completed the training course IRM 101, Basic Information Systems Acquisition
- A baccalaureate degree is desired, preferable with a major in computer science, management of automated information systems, business administration, or a related field.

The requirements and desired qualifications for level II certification are shown below:

At Level I (grade levels GS-5 through GS-9 and O-1 through O-3), typical assignments include: PEO staff Communications and/or computer staff PM office staff Systems engineering staff Software development staff	This career field requires one-year acquisition experience in communications and computer systems. A baccalaureate degree is preferred. For the following job series, a degree is required: 0801, 0854, 0855 1515, 1550 For more information on computer related job series, see our Resource Library.

When you are working in a Level I position, you will most likely be part of the Acquisition Workforce. Members of the acquisition workforce are certified at different levels (Level I, II and III). Information regarding the Acquisition Workforce is available within DoD through the Acquisition Workforce home page, which can be found through our Resource Library.

Once an employee has been certified at Level II, it is a good idea to start preparing to meet the criteria for the Acquisition Corps. The Acquisition Corps is a select group of GS-14 and GS-15 employees who encumber or are eligible to encumber Critical Acquisition Positions. Up to this point, unless you have occupied a non-designated position, you have been part of the Acquisition Workforce. DoD and each of the Services have their own Acquisition Corps. Once accepted into the Acquisition Corps, you are eligible for any Critical Acquisition Position, regardless of Service.

Criteria for selection into the Acquisition Corps for civilian personnel includes:

- Serving in a GS-13 position or higher
- Four years of acquisition experience
- A baccalaureate degree or certification by an Acquisition Career Program Board, and one of the following:

    1) At least 24 semester credit hours in accounting, business finance, business law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, organization and management
    2) At least 35 semester credit hours in the individual's career field and 12 semester hours or equivalent training in the disciplines listed above
    3) Pass an equivalency exam. Members of the Acquisition Workforce may take equivalency examinations at no cost through their agency testing center to meet the educational requirements of the Acquisition Corps, or may apply through their training departments to take college courses at no cost to the individual.

Level III employees are typically GS-13 and above or O-5 and above. They must have:

- At least four yeas experience in the acquisition of communications or computer systems, of which at least two years must be in a program office or similar organization (dedicated matrix support to a PM, PEO, DCMC PI, or Supervisor of Shipbuilding)
- Completion of IRM 303, Advanced Information Systems Acquisition

Desired qualifications include:

- Four additional years of communications/computer systems acquisition experience
- Completion of PMT 302, Advanced Program Management.

Career Opportunities for Level II and III Employees:

Career opportunities open to Level II employees include:	Career opportunities open to Level III employees include:
Branch Chief in a Program Management Office Software Development staff Systems Engineering staff AIS Program Management staff Acquisition Command HQ staff	Program Executive Officer (PEO) staff Service HQ staff AIS Program Manager Director/Division Chief in an acquisition command Senior Software Development staff

Information Technology Organization

This Section presents the importance of a team approach to the IT acquisition process and information resources management; the consequences of poor teamwork; and the responsibilities of the Integrated Product Team in IT acquisition. The main topics covered in this lesson are:

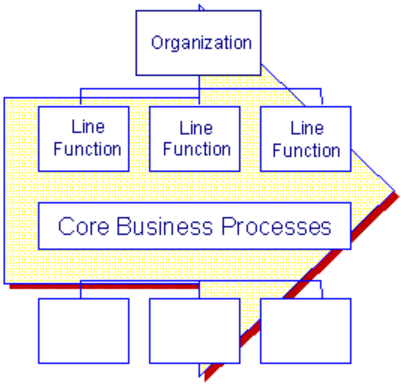
- The role of the Chief Information Officer
- Teamwork in IT acquisition and information resources management

At the head of the IT organizational structure is the Chief Information Officer (CIO). This position - found in each executive agency, including the military departments - was established in 1996 as a result of federal legislation. That legislation was the Information Technology Management Reform Act (ITMRA) - also known as the Clinger-Cohen Act. Throughout this lesson it will be referred to simply as ITMRA.

The CIO shall have information resources management duties as the official's primary duty. These duties are:

- Provide advice and assistance to the head of the agency: "The Chief Information Officer ...shall be responsible for providing advice and other assistance to the head of the executive agency and other senior management personnel of the executive agency to ensure that information technology is acquired (emphasis added) and information resources are managed ... in a manner consistent with Chapter 35 of title 44, United States Code..."
- Implement a sound and integrated IT architecture: "The Chief Information Officer ... shall be responsible for: developing, maintaining, and facilitating, the implementation of a sound and integrated information technology architecture."
- Promote effective IRM processes: "The Chief Information Officer ... shall be responsible for promoting ... [the] design and operation of all major information resources management processes ... including improvements to work processes of the executive agency."

Here is an illustration of how the CIO might manage the core business processes:



- Other important duties of the CIO include:

  - Evaluating IT programs and projects: The ITMRA calls for the CIO to evaluate the performance of IT programs of the agency on the basis of performance measures. Further, the CIO is to advise the agency head regarding whether to continue, modify, or terminate a program or project and
  - Assessing the IT management skill and knowledge of executives and managers:

As part of the annual strategic planning and performance evaluation process, the CIO is to:

- Assess the requirements established for agency personnel regarding knowledge and skill in information resources management
- Assess the extent to which the positions at the executive and upper management level meet those requirements
- Develop strategies and specific plans for hiring, training, and professional development in order to rectify any deficiencies.

DoD has established a CIO Certificate Program to satisfy part of these requirements. If you are interested in learning about a specific (Army, Navy, Air Force, Marine Corps, or DoD) IT organizational structure, information is provided in the lesson.

Now we turn to the second major topic in this lesson: teamwork. This part of the lesson will answer the following questions:

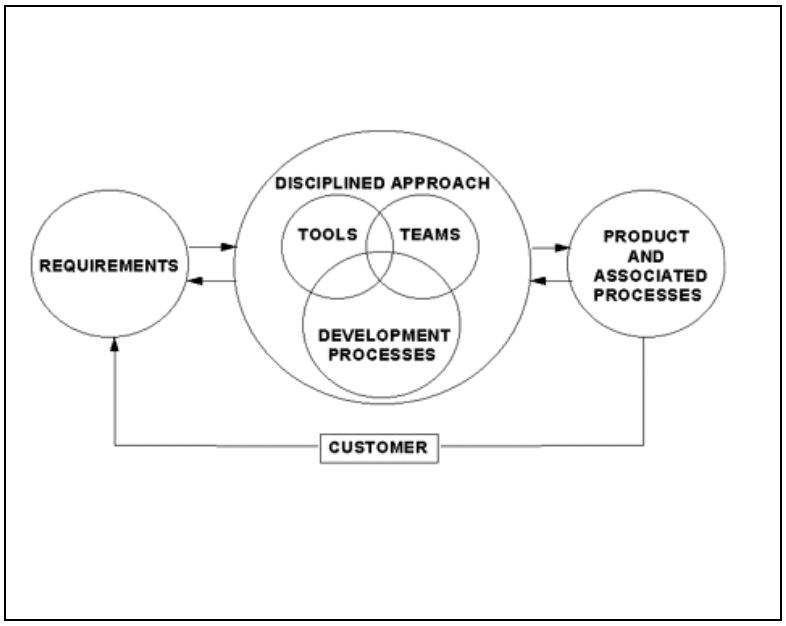
- What is Integrated Process and Product Development (IPPD)?
- What are Integrated Product Teams?
- Why IPT's in IT acquisition and information resources management?
- What are the consequences of poor teamwork?

What is Integrated Process and Product Development (IPPD)?

Integrated Product and Process Development (IPPD) has been mandated for the DoD. IPPD is a management technique that simultaneously integrates all essential acquisition activities through the use of multidisciplinary teams (Integrated Product Teams (IPTs)) to optimize the design, manufacturing, business, and supportability processes.

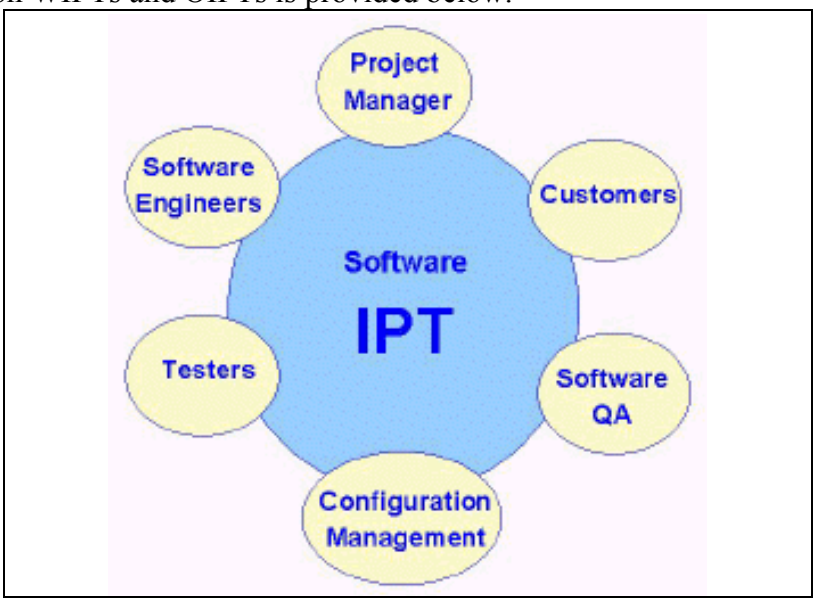
What Are Integrated Product Teams (IPTs)?

Here is an example of an IPPD:



IPT's are multi-disciplinary teams working together to build successful programs and inform decision-makers. IPT's are the teams that implement the IPPD techniques. For example, the following graphic illustrates the players on a software IPT.

Two types of IPTs are discussed in the lesson material. The first one is a Working Level Integrated Product Team (WIPT). WIPTs are part of the daily program management process. The second IPT discussed is the Overarching Integrated Product Team (OIPT). The OIPTs are part of the oversight and review process. Some additional information on WIPTs and OIPTs is provided below.



Working Level Integrated Product Teams (WIPTs) - WIPTs generally are formed at the program manager level and may include members from the government and the system contractor. A typical team at the program level might include:

- Program management
- Design engineering
- Manufacturing
- Systems engineering
- Software engineering
- Test and evaluations
- Subcontracts
- Safety and HAZMAT
- Quality assurance
- Training
- Finance
- Reliability (engineering)
- Maintainability and supportability (logistics)
- Suppliers
- Customers

The Undersecretary of Defense (Acquisition and Technology) identified critical changes necessary for WIPTs to be successful:

> "... Move away from a pattern of hierarchical decision-making to a process where decisions are made across organizational structures by integrated product teams. It means we are breaking down institutional barriers. It also means that our senior acquisition staffs are in a receive mode - not just a transmit mode. The objective is to be receptive to ideas from the field to obtain buy-in and lasting change."

Overarching Integrated Product Teams (OIPTs) - These teams are comprised of members of various staff and line levels. Typical issues that an OIPT might address include:

- Strategies for acquisition/contracting
- Cost estimates
- Logistics management

OIPTs also might get involved in preparations for an upcoming program review or milestone decision (e.g., tailoring documentation, settling unresolved issues, identifying program risk areas, etc.).

OIPTs versus WIPTs

Defense Acquisition System Attachment 1 states: "Overarching IPTs focus on strategic guidance, program assessment, and issue resolution. Working Level IPTs identify and resolve program issues, determine program status, and seek opportunities for acquisition reform. Program IPTs focus on program execution, and may include representatives from both government, and after contract award, industry." (E.2.f.)

Why IPT's for IT Acquisitions and Information Resource Management?

- Field products sooner. Sequential processing takes longer. Advancements in IT are moving at an exponential pace. Sequential processing of IT acquisition cannot keep up with this pace.
- Reduce costs. One of the major reasons for IT acquisition failures is inability to correctly specify and interpret customer requirements. Using IPT's in managing IT requirements, which include the customer, will help to minimize this problem.
- The field of IT has exploded. IPT's take advantage of the diverse expertise of members needed to manage IT acquisitions and manage information resources for an organization.

Examples of IPTs for IT Management:

- Acquisition Oversight WIPT of the DoD, established to develop policy for implementing ITMRA
- Navy CIO heads the Board of Representatives (the equivalent of an OIPT) and established a large number of standing IPTs
- Army CIO established Councils (similar to IPTs) to develop IRM policies, plans, and structures implementing
- Air Force CIO established an OIPT responsible for management and integration of cross-cutting issues

What Are the Consequences of Poor Teamwork?

- Duplicative programs
- "Stovepiped" information systems (those that are not coordinated with other systems)
- Lack of communication, coordination, and cooperation

Summary

In summary, the communications - computer systems career field is rapidly growing and is critical to our national defense. The overview discussed the following points:

- The key roles that communications—computer systems personnel play in information technology projects;
- The typical functional responsibilities of DoD personnel within the communications—computer systems career field; and
- Potential career opportunities within the communications—computer systems career field. You have also learned about the role of the Chief Information Officer and the legislation that created this position government-wide. You also learned about the importance of teamwork in the management of information resources.

You learned about the effects of poor teamwork. Lastly, you learned how CIO's in the DoD is using IPT's.

Resource Library

- Acquisition Education, Training & Career Development: http://www.acq.osd.mil/dau/dau.html Service Acquisition Corps Homepage: http://www.acq.osd.mil/dau/dau.html
- Defense Acquisition Workforce Improvement Act: http://www.dtic.mil/acqed2/legislation/legis.html.
- IT Organizational Structure in Army: http://www.army.mil/ciog6/cio/
- IT Organizational Structure in Navy: http://www.doncio.navy.mil/
- IT Organizational Structure in Air Force: http://www.cio.hq.af.mil/